

Claims

1. A method for determining the performance of decoding in a telecommunication system comprising a decoder and a testing apparatus for supplying test data to the decoder, the method comprising steps of
5 generating test data comprising signalling data in a signalling frame format,
transmitting the test data mapped into two consecutive frames from the testing apparatus to the decoder for decoding,
10 decoding the signalling data from the received two test data frames,
transmitting said decoded signalling data back to the testing apparatus encoded in one frame, and
determining the performance of decoding by comparing the transmitted signalling data and the received signalling data in the test apparatus.
- 15 2. A method according to claim 1, further comprising
activating a traffic channel of the telecommunication system before transmitting the test data, and
transmitting the test data from the testing apparatus to the decoder in the downlink traffic channel and from the decoder to the testing apparatus in the uplink traffic channel.
- 20 3. A method according to claim 2, further comprising
transmitting the signalling data back to the testing apparatus in the first available uplink traffic channel time frames.
4. A method according to claim 2, further comprising
transmitting, prior to transmitting the test data, a message from the
25 testing apparatus to activate a test loop in the decoder, which test loop is implemented in functional connection with the decoder and
acknowledging said message from the decoder to the testing apparatus, in response to the traffic channel being activated.
- 30 5. A method according to claim 4, wherein
the message is a bit combination of CLOSE_TCH_LOOP_CMD message according to the GSM system.
6. A method according to claim 1, further comprising
determining the performance of channel decoding of RATSCCH frame in AMR half-rate speech channel.
- 35 7. A method according to claim 1, further comprising

determining the performance of channel decoding of SID_UPDATE frame in AMR half-rate speech channel.

8. A method for determining the performance of decoding in a telecommunication system comprising a decoder and a testing apparatus for supplying test data to the decoder, the method comprising steps of

generating test data comprising signalling data in a signalling frame format,

transmitting the test data mapped into two consecutive frames from the testing apparatus to the decoder for decoding,

10 receiving the test data one frame at time,

extracting the test data from the received test data frames in the decoder,

transmitting said test data frames back to the testing apparatus, and

15 determining the performance of decoding by comparing the transmitted signalling data and the received signalling data in the test apparatus.

9. A method according to claim 8, further comprising

transmitting said test data frames back to the testing apparatus encoded in one frame having a length of a speech frame.

10. A method according to claim 8, further comprising

20 activating a traffic channel of the telecommunication system before transmitting the test data, and

transmitting the test data from the testing apparatus to the decoder in the downlink traffic channel and from the decoder to the testing apparatus in the uplink traffic channel.

25 11. A method according to claim 10, further comprising

transmitting the signalling data back to the testing apparatus in the first available uplink traffic channel time frames.

12. A method according to claim 10, further comprising

30 transmitting, prior to transmitting the test data, a message from the testing apparatus to activate a test loop in the decoder, which test loop is implemented in functional connection with the decoder and

acknowledging said message from the decoder to the testing apparatus, in response to the traffic channel being activated.

13. A method according to claim 12, wherein

35 the message is a bit combination of CLOSE_TCH_LOOP_CMD message according to the GSM system.

14. A method according to claim 8, further comprising determining the performance of channel decoding of RATSCCH frame in AMR half-rate speech channel.

5 15. A method according to claim 8, further comprising determining the performance of channel decoding of SID_UPDATE frame in AMR half-rate speech channel.

16. A testing apparatus for determining the performance of a de-
coder, which testing apparatus is arranged to be functionally connected to the
decoder, the testing apparatus comprising

10 a composing means for composing a test data comprising signalling
data,

a transmitter for transmitting the test data mapped into two con-
secutive frames to the decoder for decoding,

15 a receiver for receiving the test data in one frame from the decoder,
said test data comprising the signalling data, and

a comparator determining the performance of decoding by compar-
ing the transmitted signalling data and the received signalling data.

17. A testing apparatus according to claim 16, wherein the testing
apparatus is arranged to

20 activate a traffic channel towards the decoder before transmitting
the test data,

transmit the test data to the decoder in the downlink traffic channel,
and

receive the test data from the decoder in the uplink traffic channel.

25 18. A testing apparatus according to claim 17, wherein the testing
apparatus is arranged to

transmit, prior to transmitting the test data, a message to the de-
coder to activate a test loop in the decoder, which test loop is implemented in
functional connection with the decoder and

30 receive an acknowledgement of said message from the decoder, in
response to the traffic channel being activated.

19. A testing apparatus for determining the performance of a de-
coder, which testing apparatus is arranged to be functionally connected to the
decoder, the testing apparatus comprising

35 a composing means for composing test data comprising signalling
data,

a transmitter for transmitting the test data mapped into two consecutive frames to the decoder for decoding,

a receiver for receiving the test data from the decoder one frame at a time, and

5 a comparator for determining the performance of decoding by comparing the transmitted signalling data and the received signalling data.

20. A testing apparatus according to claim 19, wherein the testing apparatus is arranged to

activate a traffic channel towards the decoder before transmitting
10 the test data,

transmit the test data to the decoder in the downlink traffic channel,
and

receive the test data from the decoder in the uplink traffic channel.

21. A testing apparatus according to claim 20, wherein the testing
15 apparatus is arranged to

transmit, prior to transmitting the test data, a message to the decoder to activate a test loop in the decoder, which test loop is implemented in functional connection with the decoder and

receive an acknowledgement of said message from the decoder, in
20 response to the traffic channel being activated.

22. A mobile station, comprising

a receiver for receiving test data comprising signalling data mapped into two consecutive frames from a testing apparatus,

a decoder for decoding the test data,

25 the decoder being arranged to decode the test data from the received two test data frames, and

the mobile station further comprising a transmitter for transmitting said decoded test data back to the testing apparatus encoded in one frame.

23. A mobile station, comprising

30 a receiver for receiving test data comprising signalling data mapped into two consecutive frames from a testing apparatus,

a decoder for decoding the test data,

the decoder being arranged to receiving the test data one frame at a time, and to extract the test data from the received test data frame in the de-
35 coder, and

the mobile station further comprising a transmitter for transmitting said test data back to the testing apparatus.